10. The apparatus according to claim **8**, wherein a list including a plurality of specific applications and service indications associated with each of the specific applications is provided, and the processor is configured to insert the service identification in the packet by referring to the list.

11. The apparatus according to claim **8**, wherein the apparatus is provided in transport detection function network element or in a gateway.

12. A method comprising

receiving a packet from a network,

detecting a service identification in the packet,

deciding, based on the detected service identification, whether a tunnel protocol extension header is to be generated or not, and,

when the tunnel protocol extension header is to be generated, generating the tunnel protocol extension header, encapsulating the received packet with the generated tunnel protocol extension header and forwarding the encapsulated packet.

13. The method according to claim **12**, further comprising

deciding whether a tunnel protocol extension header is to be generated or not by referring to a predefined list of service identifications.

14. The method according to claim **13**, wherein the list comprises a content of a tunnel protocol extension header for a service identification.

15. The method according to claim **13**, wherein a plurality of predefined lists are provided, and the method further comprises

selecting an appropriate list of the plurality of predefined lists based on an access point name involved in a session in which the packet is received.

16. The method according to claim **12**, further comprising

deciding, based on the access point name involved in a session either to decide based on the detected service identification whether a tunnel protocol extension header is to be generated or not, or not to generate any tunnel protocol extension.

17. The method according to claim **12**, further comprising

replacing the detected service indication with a default service indication.

18. The method according to claim **12**, wherein

the service identification comprises a DSCP value and/or

the tunnel protocol extension header is a GTP-U extension header.

19. A method comprising

receiving a packet,

detecting whether the packet relates to a specific application, and,

when it is detected that the packet relates to the specific application, inserting a service identification in the packet based on the application, or,

when it is detected that the packet does not relate to a specific application, inserting a default service identification in the packet.

20. The method according to claim **19**, wherein the specific application is a predefined application which requires special treatment such as providing a specific bandwidth, a specific data rate, a specific quality of service class, resource reservation for a specific duration, and/or a specific routing for the packet.

21. The method to claim **19**, wherein a list including a plurality of specific applications and service indications associated with each of the specific applications is provided, and the method further comprises

inserting the service identification in the packet by referring to the list.

22. A system comprising a gateway including an apparatus according to claim **1**, and a transport detection function including an apparatus comprising

an interface unit configured to provide connection to a network, and

a processor configured

to receive a packet via the interface unit,

to detect whether the packet relates to a specific application, and,

when it is detected that the packet relates to the specific application, to insert a service identification in the packet based on the application, or,

when it is detected that the packet does not relate to a specific application, to insert a default service identification in the packet, and wherein

the processor of the gateway is configured to receive the packets sent from the transport detection function.

23. A computer program product comprising code means embodied on a non-transitory computer-readable medium, said code means configured to perform a method according to claim **12** when run on a processing means or module.

24. (canceled)

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